



Effects of apparent temperature on daily mortality in Lisbon and Oporto, Portugal

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Abstract:

Background. Evidence that elevated temperatures can lead to increased mortality is well documented, with population vulnerability being location specific. However, very few studies have been conducted that assess the effects of temperature on daily mortality in urban areas in Portugal. **Methods.** In this paper time-series analysis was used to model the relationship between mean apparent temperature and daily mortality during the warm season (April to September) in the two largest urban areas in Portugal: Lisbon and Oporto. We used generalized additive Poisson regression models, adjusted for day of week and season. **Results.** Our results show that in Lisbon, a 1°C increase in mean apparent temperature is associated with a 2.1% (95%CI: 1.6, 2.5), 2.4% (95%CI: 1.7, 3.1) and 1.7% (95%CI: 0.1, 3.4) increase in all-causes, cardiovascular, and respiratory mortality, respectively. In Oporto the increase was 1.5% (95%CI: 1.0, 1.9), 2.1% (95%CI: 1.3, 2.9) and 2.7% (95%CI: 1.2, 4.3) respectively. In both cities, this increase was greater for the group >65 years. **Conclusion.** Even without extremes in apparent temperature, we observed an association between temperature and daily mortality in Portugal. Additional research is needed to allow for better assessment of vulnerability within populations in Portugal in order to develop more effective heat-related morbidity and mortality public health programs.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature, Other Exposure

Temperature: Fluctuations

Other Exposure: dew point

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Climate Change and Human Health Literature Portal

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Portugal

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Morbidity/Mortality, Respiratory Effect

Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): cardiovascular disease mortality

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : respiratory disease mortality

Population of Concern: A focus of content

Population of Concern: ☒

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified